

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re the Application of:

Koji Shigemura

Application No. 10/717,571

Group Art Unit: 1762

Confirmation No. 9396

Filed: November 21, 2003

Examiner: James Lin

For: DEPOSITION MASK FRAME ASSEMBLY, METHOD OF FABRICATING THE SAME,
AND METHOD OF FABRICATING ORGANIC ELECTROLUMINESCENT DEVICE
USING THE DEPOSITION MASK FRAME ASSEMBLY

APPEAL BRIEF

Mail Stop Appeal Brief—Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

Pursuant to the Notice of Appeal of June 27, 2007, this Appeal Brief is being filed in response to the Final Office Action of February 27, 2007, and the Advisory Action of June 1, 2007. The fee of \$500.00 required for filing this Appeal Brief is being submitted herewith.

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I. REAL PARTY IN INTEREST

The real party in interest is the current assignee of the present application, Samsung SDI Co., Ltd., a corporation of the Republic of Korea, having a place of business at 575 Shin-dong, Yeongtong-gu, Suwon-si, Gyeonggi-do, Republic of Korea.

II. RELATED APPEALS AND INTERFERENCES

There are no prior or pending appeals, interferences, or judicial proceedings known to the applicant, the applicant's legal representatives, or the assignee which may be related to, directly affect, or be directed affected by or have a bearing on the Board's decision in the pending appeal in the present application.

III. STATUS OF CLAIMS

Claims 1-5, 7-19, 21, and 22 are pending, with claims 1, 8, and 14 being independent.

Claims 6 and 20 have been canceled.

Claims 1-5 and 7 are withdrawn from consideration as being directed to non-elected Invention I.

Claims 8-13 are withdrawn from consideration as being directed to non-elected Invention II.

Claims 14-19, 21, and 22 are under consideration as being directed to elected Invention III.

Claims 14-19, 21, and 22 have been rejected.

Claims 14-19, 21, and 22 are on appeal.

IV. STATUS OF AMENDMENTS

An Amendment After Final Rejection was filed on September 6, 2006, in response to the Final Office Action of June 6, 2006.

In the Advisory Action of September 19, 2006, the Examiner indicated that, for purposes of appeal, the Amendment After Final Rejection of September 6, 2006, would not be entered because it was not deemed to place the application in better form for appeal by materially reducing or simplifying the issues for appeal.

A Request for Continued Examination (RCE) and an Amendment were filed on September 28, 2006, in response to the Advisory Action of September 19, 2006. On pages 1 and 7 of the Amendment of September 28, 2006, the applicant requested that the Amendment After Final Rejection of September 6, 2006, not be entered. The Amendment of September 28, 2006, amended the application as it appeared prior to the Amendment After Final Rejection of September 6, 2006.

A Request for Reconsideration After Final Rejection that did not present any amendments but presented only arguments was filed on May 23, 2007, in response to the Final Office Action of February 27, 2007.

In the Advisory Action of June 1, 2007, the Examiner stated that "[t]he request for reconsideration has been considered but does NOT place the application in condition for allowance." However, the Examiner withdrew the rejection of claims 14-19 and 21 under 35 USC 112, first paragraph, as discussed below in greater detail under the heading "Argument."

V. SUMMARY OF CLAIMED SUBJECT MATTER

Title 37 CFR 41.37(c)(1)(v) requires this Appeal Brief to contain a concise explanation of the subject matter defined in each of the independent claims involved in this appeal, which shall refer to the specification by page and line number, and to the drawing, if any, by reference characters. Such a concise explanation is provided below for the subject matter defined in independent claim 14 (the only independent claim on appeal), except that the concise explanation refers to the specification by paragraph number, rather than page and line number. However, this concise explanation is not to be construed as limiting the scope of claim 14 in any way.

Title 37 CFR 41.37(c)(1)(v) also requires, for each independent claim involved in this appeal and for each dependent claim argued separately under the provisions of 37 CFR 41.37(c)(1)(vii), that every means plus function and step plus function as permitted by 35 USC 112, sixth paragraph, be identified and that the structure, material, or acts described in the specification as corresponding to each claimed function must be set forth with reference to the specification by page and line number, and to the drawing, if any, by reference characters. However, this Appeal Brief does not contain such an explanation because it is the applicant's position that no means plus function or step plus function elements are recited in the claims of the present application.

The specification includes the following amended paragraphs [0007] and [0051] that have been presented during the prosecution of the present application and appear at the locations indicated below:

[0007] appears on page 2 of the Amendment of April 11, 2006

[0051] appears on page 2 of the Amendment of September 28, 2006

According to an aspect of the invention as recited in independent claim 14, a method of manufacturing an organic EL device (paragraphs [0035] and [0054]) comprises forming a first electrode layer in a predetermined pattern on an insulating substrate (paragraphs [0035] and [0055]); forming an organic film comprising at least a patterned emission layer on the first electrode layer (paragraphs [0035], [0054], [0057], and [0058]); forming a second electrode layer in a predetermined pattern on the organic film (paragraphs [0035], [0054], and [0059]); and sealing the second electrode layer (paragraphs [0035] and [0060]), wherein the organic film

and/or the second electrode layer are/is deposited using a deposition mask frame assembly (paragraphs [0035], [0054], [0058], [0059], and [0061] and FIG. 3), the deposition mask frame assembly (FIG. 3) comprising a flat mask 110 (paragraphs [0035] and [0040] and FIGS. 3, 5, and 6A-6C) comprising a flat thin plate (paragraph [0035] and FIGS. 3, 5, and 6A-6C) in which a predetermined pattern of apertures 112 (paragraphs [0035], [0041], and [0043] and FIGS. 3, 4, 5, and 6A-6C) is formed, the flat mask having a first flat surface (FIGS. 3, 5, and 6A-6C) extending over an entire area of the flat mask (FIGS. 3 and 6A-6C), and a second flat surface (FIGS. 3, 5, and 6A-6C) extending over the entire area of the flat mask (FIGS. 3 and 6A-6C), the second flat surface being separated from the first flat surface by a thickness of the mask (FIG. 5); a flat frame 120 (paragraphs [0035], [0040], and [0042] and FIGS. 3 and 6A-6C) supporting the first flat surface of the flat mask 110 (paragraphs [0035], [0040], [0042], and [0052] and FIGS. 3 and 6A-6C) so that the flat mask 110 is tensed (paragraphs [0035], [0040], [0051], and [0052] and FIG. 6B) and the first flat surface remains flat (FIGS. 3 and 6A-6C); and a flat cover mask 130 (paragraphs [0035] and [0042] and FIGS. 3 and 6A-6C) supporting the second flat surface of the flat mask 110 (paragraphs [0035], [0040], [0042], and [0052] and FIGS. 3 and 6A-6C) so that the second flat surface remains flat (FIGS. 3 and 6A-6C).

VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

1. Whether claims 14-19, 21, and 22 comply with the written description requirement of 35 USC 112, first paragraph.
2. Whether 14-17 and 21 are unpatentable under 35 USC 103(a) over Utsugi et al. (Utsugi) (U.S. Patent Application Publication No. 2002/0150674) in view of Ito et al. (Ito) (U.S. Patent No. 5,652,067) and Martin (U.S. Patent No. 4,676,193).
3. Whether claim 15 is unpatentable under 35 USC 103(a) over Utsugi in view of Ito and Martin as applied to claim 14, and further in view of Yamada et al. (Yamada) (U.S. Patent Application Publication No. 2001/0019807).
4. Whether claims 18 and 19 are unpatentable under 35 USC 103(a) over Utsugi in view of Ito and Martin as applied to claim 17, and further in view of Kitazume (U.S. Patent Application Publication No. 2002/0025406).
5. Whether claim 22 is unpatentable under 35 USC 103(a) over Utsugi in view of Ito and Martin as applied to claim 14, and further in view of Fujimori et al. (Fujimori) (U.S. Patent Application Publication No. 2002/0102754).

VII. ARGUMENT

Claim Rejections Under 35 USC 112

Rejection 1

In the Final Office Action of February 27, 2007, the Examiner rejected claims 14-19, 21, and 22 under 35 USC 112, first paragraph, as failing to comply with the written description requirement because the Examiner is of the opinion that claims 14 and 22 contain subject matter that was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor, at the time the application was filed, had possession of the claimed invention.

However, it is submitted that claims 14-19, 21, and 22 do in fact comply with the written description requirement of 35 USC 112, first paragraph, for at least the following reasons.

In explaining the rejection, the Examiner states as follows with respect to independent claim 14 on page 2 of the Final Office Action of February 27, 2007:

There is no support in claim 14 for "a flat frame supporting the first flat surface" and "a flat cover mask support the second flat surface" in light of "a first flat surface extending over an entire area of the flat mask, and a second flat surface extending over the entire area of the flat mask". The first and second surfaces refer to the *entire* flat surface of the mask. According to Figs. 3 and 6A-6C, the frame and cover mask do not cover the entire flat surface of the mask. For the purposes of this examination, it will be interpreted that the frame and cover mask at least covers parts of the mask.

These comments are also applicable to dependent claims 15-19, 21, and 22 that depend directly or indirectly from independent claim 14.

Furthermore, the Examiner states as follows with respect to dependent claim 22 on page 2 of the Final Office Action of February 27, 2007:

The specification does not fully support the limitation "wherein the flat frame and the flat cover mask *are the only elements that touch the flat mask*" (claim 22, emphasis added by Examiner). For example, the mask, cover mask, and frame can be joined together using an adhesive agent such as welding [0045]. The adhesive agent necessarily contacts the mask. Therefore, the frame and cover mask are not the only elements that touch the

mask because the adhesive agent would come into contact with the mask as well.

These comments are applicable only to dependent claim 22 because no claims depend from dependent claim 22.

The applicant presented arguments traversing the rejection of claims 14-19, 21, and 22 under 35 USC 112, first paragraph, on pages 6 and 7 of the Request for Reconsideration After Final Rejection of May 23, 2007.

In response to these arguments, the Examiner states in item 5 on page 1 (the form PTOL-303) of the Advisory Action of June 1, 2007, that "[a]pplicant's reply has overcome the following rejection(s): 35 U.S.C. 112 1st paragraph," and states as follows on page 2 of the Advisory Action of June 1, 2007:

Applicant's arguments, see pg. 6, filed 5/23/2007, with respect to claims 14-19 and 21-22 have been fully considered and are persuasive. The 35 U.S.C. 112, first paragraph rejection (i.e., the rejection regarding the first and second flat surfaces) of the claims has been withdrawn.

Applicant's arguments filed 5/23/2007 have been fully considered but they are not persuasive.

The Applicant argues on pg. 7 that the teaching of laser welding provide support for "wherein the flat frame and the flat mask are the only elements that touch the flat mask". However, such a limitation can be met if the frame and mask were clamped together without any sort of welding. The present specification does not provide any support for clamping. If the Applicant intends to claim laser welding, then the Applicant is advised to explicitly claim laser welding.

Thus, it appears from these arguments that the Examiner has withdrawn the rejection of claims 14-19, 21, and 22 under 35 USC 112, first paragraph, with respect to the features "a flat frame supporting the first flat surface" and "a flat cover mask support the second flat surface" recited in independent claim 14, but has maintained the rejection of claim 22 under 35 USC, first paragraph, with respect to the feature "wherein the flat frame and the flat cover mask are the only elements that touch the flat mask" recited in dependent claim 22. Accordingly only the rejection of claim 22 under 35 USC 112, first paragraph, will be addressed below.

As indicated above, in explaining the rejection of dependent claim 22 on page 2 of the Final Office Action of February 27, 2007, the Examiner states as follows:

The specification does not fully support the limitation "wherein the flat frame and the flat cover mask *are the only elements that touch the flat mask*" (claim 22, emphasis added by Examiner). For example, the mask, cover mask, and frame can be joined together using an adhesive agent such as welding [0045]. The adhesive agent necessarily contacts the mask. Therefore, the frame and cover mask are not the only elements that touch the mask because the adhesive agent would come into contact with the mask as well.

However, paragraph [0045] of the specification referred to by the Examiner states that "[w]hen considering a change in accuracy after the joining, laser welding is preferable," and that "[w]elding dots 140 of FIG. 3 denote dots used in dot welding using a laser." It is submitted that when the mask 110, the frame 120, and the cover mask 130 shown in FIG. 3 are joined together using laser dot welding, the heat of the laser melts the mask 110, the frame 120, and the cover mask 130 together in the dots, such that the frame 120 and the cover mask 130 are the only elements that touch the mask 110. Accordingly, it is submitted that at least FIG. 3 and paragraph [0045] of the specification provide support for the feature "wherein the flat frame and the flat cover mask are the only elements that touch the flat mask" recited in claim 22.

The above arguments were also presented on page 7 of the Request for Reconsideration After Final Rejection of May 23, 2007. As indicated above, in response to these arguments, the Examiner states as follows on page 2 of the Advisory Action of June 1, 2007:

The Applicant argues on pg. 7 that the teaching of laser welding provide support for "wherein the flat frame and the flat mask are the only elements that touch the flat mask". However, such a limitation can be met if the frame and mask were clamped together without any sort of welding. The present specification does not provide any support for clamping. If the Applicant intends to claim laser welding, then the Applicant is advised to explicitly claim laser welding.

The Examiner's position appears to be that the feature "wherein the flat frame and the flat cover mask are the only elements that touch the flat mask" recited in claim 22 reads on an embodiment in which the flat frame, the flat mask, and the flat cover mask are held together by clamping without welding, and that since the specification of the present application does not explicitly disclose such an embodiment, there is no support for this feature of claim 22 in the specification. However, it is submitted that the test for determining whether a claim complies with the written description requirement of 35 USC 112, first paragraph, is not whether the

Examiner can conceive of some embodiment that is covered by the claim, but is not explicitly disclosed in the specification. It is noted that the Examiner has not cited any statute, rule, procedure, or decision in support of his position.

Rather, as set forth in MPEP 2163.02, an objective standard for determining compliance with the written description requirement is, "does the description clearly allow persons of ordinary skill in the art to recognize that he or she invented what is claimed." *In re Gosteli*, 872 F.2d 1008, 1012, 10 USPQ2d 1614, 1618 (Fed. Cir. 1989). Under *Vas-Cath, Inc. v. Mahurkar*, 935 F.2d 1555, 1563-64, 19 USPQ2d 1111, 1117 (Fed. Cir. 1991), to satisfy the written description requirement, an applicant must convey with reasonable clarity to those skilled in the art that, as of the filing date sought, he or she was in possession of the invention, and that the invention, in that context, is whatever is now claimed.

Here, paragraph [0045] of the specification referred to by the Examiner in his explanation of the rejection states that "[a]s shown in FIG. 3, the mask 110, the cover mask 130, and the frame 120 are joined together in such a way that the mask 110 is located between the cover mask 130 and the frame 120"; that "[t]he joining may be achieved using an adhesive agent, preferably by welding"; that [w]hen considering a change in accuracy after the joining, laser welding is preferable"; and that "[w]elding dots 140 of FIG. 3 denote dots used in dot welding using a laser." It is submitted one of ordinary skill in the art, at the time the present application was filed, would have understood that when the mask 110, the frame 120, and the cover mask 130 shown in FIG. 3 are joined together using laser dot welding as described in paragraph [0045] of the specification, the heat of the laser melts the mask 110, the frame 120, and the cover mask 130 together in the welding dots 140, such that the frame 120 and the cover mask 130 are the only elements that touch the mask 110. Accordingly, it is submitted that at least FIG. 3 and paragraph [0045] of the specification do in fact convey with reasonable clarity to those skilled in the art that, as of the filing date of the present application, the applicant was in possession of the invention now recited in claim 22 that includes the feature "wherein the flat frame and the flat cover mask are the only elements that touch the flat mask."

Accordingly, for at least the foregoing reasons, it is submitted that claim 22 does in fact comply with the written description requirement of 35 USC 112, first paragraph.

For at least the foregoing reasons, it is respectfully requested that the rejection of claim 22 under 35 USC 112, first paragraph, as failing to comply with the written description requirement be reversed.

Claim Rejections Under 35 USC 103

Rejection 2

Claims 14-17 and 21 were rejected under 35 USC 103(a) as being unpatentable over Utsugi et al. (Utsugi) (U.S. Patent Application Publication No. 2002/0150674) in view of Ito et al. (Ito) (U.S. Patent No. 5,652,067) and Martin (U.S. Patent No. 4,676,193).

However, it is submitted that claims 14-17 and 21 are in fact patentable over Utsugi, Ito, and Martin for at least the following reasons.

Claim 14

It is submitted that Utsugi, Ito, and Martin do not disclose or suggest "a flat mask comprising a flat thin plate in which a predetermined pattern of apertures is formed, the flat mask having a first flat surface extending over an entire area of the flat mask, and a second flat surface extending over the entire area of the flat mask, the second flat surface being separated from the first flat surface by a thickness of the mask; a flat frame supporting the first flat surface of the flat mask so that the flat mask is tensed and the first flat surface remains flat; and a flat cover mask supporting the second flat surface of the flat mask so that the second flat surface remains flat" as recited in independent claim 14.

In explaining the rejection of claim 14, the Examiner states as follows on pages 3 and 4 of the Final Office Action of February 27, 2007 (material in brackets [] added for clarification):

Martin discloses a mask assembly that is suitable for vacuum vapor deposition (column 1, lines 13-21 and column 2, lines 54-59). Fig. 7 shows a mask assembly 32 comprising: a mask 40', a frame 34, and a cover mask 88. The frame and cover mask sandwich the mask. . . .

The mask in Fig. 7 of Martin does not have a flat surface extending over an entire area of the mask. In particular, a raised boss member 98 of the cover mask defines a clamping member

counterbore [94] (col. 10, lines 47-50) and causes the mask to lie in two separate planes. The clamping member counterbore seems to hold the entire mask assembly together, which would in turn provide the means for affixing the mask. One of ordinary skill in the art would realize that the elimination of the raised boss member and clamping member counterbore would result in the loss of such functions. However, Martin teaches in a different embodiment that welding can be used to join different parts of the mask assembly and that welding can be a means for affixing the mask (col. 8, lines 63-68; col. 10, lines 22-32). In view of this teaching, one of ordinary skill in the art would recognize that the step of welding would supplement the loss of the function of the raised boss member and clamping member counterbore. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to have omitted the raised boss member and clamping member [counterbore] (i.e., such that the mask would have a flat surface extending over an entire area of the mask) and to have welded the mask assembly together after clamping the mask of Fig. 7 with a reasonable expectation of success because Martin teaches that welding is an operable method of joining parts of the mask assembly and affixing the mask with the desired tension.

The Examiner states that "[o]ne of ordinary skill in the art would realize that the elimination of the raised boss member and clamping member counterbore would result in the loss of such functions." However, the Examiner has not identified anything whatsoever in Martin or elsewhere in the prior art that would have motivated one of ordinary skill in the art to eliminate the raised boss member 98 and clamping member counterbore 94 in FIG. 7 of Martin as proposed by the Examiner. Rather, it is submitted that the only suggestion that this be done is contained in the applicant's disclosure, which the Examiner is prohibited from relying on as a source for the motivation required to support a rejection under 35 USC 103(a) by MPEP 2143 (see MPEP page 2100-126), which provides as follows (emphasis by underlining added):

To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations.

The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both

be found in the prior art, not in applicant's disclosure. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991).

FIGS. 1-6 of Martin disclose a first embodiment of a stabilized mask assembly 32, and FIG. 7 of Martin discloses a second embodiment of the stabilized mask assembly 32. Martin discloses that these two embodiments are alternate embodiments in column 21, lines 18-33, of Martin. It is not seen where anything whatsoever in Martin or elsewhere in the prior art discloses or suggests that features of one of these embodiments can be used in the other of these embodiments as proposed by the Examiner.

The above arguments were also presented on pages 7-9 of the Request for Reconsideration After Final Rejection of May 23, 2007 (except that the citation of *In re Vaeck* in MPEP 2143 was omitted on page 9). In response to these arguments, the Examiner states as follows on page 2 of the Advisory Action of June 1, 2007:

The Applicant argues on pg. 9 that the Examiner has not identified anything whatsoever in Martin or elsewhere in the prior art that would have motivated one of ordinary skill in the art to eliminate the raised boss member 98 and clamping member counterbore 94 in Fig. 7. However, the rejection relies on the obviousness of using the welding of the embodiment of Figs. 1-6 in place of the clamping used in the embodiment of Fig. 7. The raised boss member is only required with the use of clamping. Thus, one of ordinary skill would have recognized that such portions are no longer required when the clamping method is no longer being used. See, e.g., 2144.II.A.

Thus, the Examiner apparently considers "2144.II.A" to provide support for his position. However, it is not clear what "2144.II.A" is. Assuming *arguendo* that the Examiner meant to refer to MPEP 2144.II.A, it is noted that neither the PDF version nor the HTML version of the current version of the MPEP (Eighth Edition, August 2001, Latest Revision August 2006) on the PTO's Web site contains a section "2144.II.A." Perhaps the Examiner meant to refer to MPEP 2144.04(II)(A), which provides as follows (emphasis by underlining in original):

II. ELIMINATION OF A STEP OR AN ELEMENT AND ITS FUNCTION

A. *Omission of an Element and Its Function Is Obvious If the Function of the Element Is Not Desired*

Ex parte Wu, 10 USPQ 2031 (Bd. Pat. App. & Inter. 1989)
(Claims at issue were directed to a method for inhibiting corrosion on metal surfaces using a composition consisting of epoxy resin,

petroleum sulfonate, and hydrocarbon diluent. The claims were rejected over a primary reference which disclosed an anticorrosion composition of epoxy resin, hydrocarbon diluent, and polybasic acid salts wherein said salts were taught to be beneficial when employed in a freshwater environment, in view of secondary references which clearly suggested the addition of petroleum sulfonate to corrosion inhibiting compositions. The Board affirmed the rejection, holding that it would have been obvious to omit the polybasic acid salts of the primary reference where the function attributed to such salt is not desired or required, such as in compositions for providing corrosion resistance in environments which do not encounter fresh water.). See also *In re Larson*, 340 F.2d 965, 144 USPQ 347 (CCPA 1965) (Omission of additional framework and axle which served to increase the cargo carrying capacity of prior art mobile fluid carrying unit would have been obvious if this feature was not desired.); and *In re Kuhle*, 526 F.2d 553, 188 USPQ 7 (CCPA 1975) (deleting a prior art switch member and thereby eliminating its function was an obvious expedient).

Here, the Examiner reasons that since the raised boss member 98 (and presumably the clamping member counterbore 94 that it creates) shown in FIG. 7 of Martin are required only with the use of clamping, such as in the clamping embodiment shown in FIG. 7 of Martin, one of ordinary skill would have recognized that the raised boss member 98 and the clamping member counterbore 94 are no longer required when clamping is no longer being used, such as when welding is used in place of clamping, such as in the welding embodiment shown in FIGS. 1-6 of Martin. However, the Examiner has apparently overlooked the fact that the clamping member 88 in FIG. 7 of Martin, which the Examiner considers to correspond to the "flat cover mask" recited in claim 14 when modified to eliminate the raised boss member 98 and the clamping member counterbore 94 as proposed by the Examiner, is also required only with the use of clamping.

Thus, applying the Examiner's own reasoning with respect to the raised boss member 98 and the clamping member counterbore 94 to the clamping member 88, it is submitted that one of ordinary skill would have recognized that the clamping member 88 is also no longer required when clamping is no longer being used, such as when welding is used in place of clamping, such as in the welding embodiment shown in FIGS. 1-6 of Martin. Accordingly, pursuant to the Examiner's own reasoning and MPEP 2144.04(II)(A) apparently relied on by the Examiner himself, it is submitted that it would not have been obvious to one of ordinary skill in the art to eliminate the raised boss member 98 and clamping member counterbore 94 in FIG. 7 of Martin as proposed by the Examiner.

As can be seen from the preceding discussion, the Examiner has proposed a selective modification of the alternate embodiments in FIGS. 1-6 and FIG. 7 of Martin, in which the Examiner has proposed that the clamping member 88 from the clamping embodiment in FIG. 7 of Martin be combined with the welding embodiment in FIGS. 1-6 of Martin, but only after the clamping member 88 has been modified by eliminating the raised boss member 98 and the clamping member counterbore 94 from the clamping member 88 to make the clamping member 88 flat. It is submitted that the Examiner has not identified anything whatsoever in Martin or elsewhere in the prior art that would have motivated one of ordinary skill in the art to make such a selective modification of Martin. Furthermore, it is submitted that such a selective modification of Martin is contrary to MPEP 2144.04(II)(A) apparently relied on by the Examiner himself.

Returning to the rejection, it appears that the Examiner has proposed that the embodiment in FIG. 7 of Martin be modified as follows. Take the clamping member 88 (corresponding to the cover mask in claim 14) and grind off the raised boss member 98 so that the clamping member 88 has a flat surface. Place the mask foil 40' (corresponding to the mask in claim 14) on the mask supporting frame 34 (corresponding to the frame in claim 14). Apply tension to the mask foil 40'. Place the modified clamping member 88 without the raised boss member 98 and having the flat surface on top of the metal foil 40' so that the metal foil 40' under tension is sandwiched between the mask supporting frame 34 and the modified clamping member 88. Finally, weld the metal foil 40' under tension, the mask supporting frame 34, and the modified clamping member 88 together. However, it is submitted that there is simply no suggestion whatsoever in Martin or elsewhere in the prior art to make these extensive modifications to the embodiment in FIG. 7 of Martin, particularly with respect to grinding off the raised boss member 98 of the clamping member 88 so that the clamping member 88 has a flat surface. Nor has the Examiner even alleged that such a suggestion to make this modification exists. Rather, the Examiner has merely alleged that it would have been obvious to make this modification.

The above arguments were also presented on pages 9 and 10 of the Request for Reconsideration After Final Rejection of May 23, 2007. In response to these arguments, the Examiner states as follows on page 2 of the Advisory Action of June 1, 2007:

The Applicant argues on pg. 10 that there is simply no suggestion to grind off the raised boss member 98 of the clamping member 88 so that the clamping member 88 has a flat surface.

However, one of ordinary skill would have used any known method to make the modification and is not limited to just grinding off unnecessary portions because the claims encompass any method.

However, the Examiner has apparently missed the main point of the applicant's arguments, which is that there is simply no suggestion whatsoever in Martin or elsewhere in the prior art to make the extensive modifications to the embodiment in FIG. 7 of Martin that would be required to implement the modification of Martin proposed by the Examiner. This modification would require removing the raised boss member 98 of the clamping member 88 so that the clamping member 88 has a flat surface. The applicant's reference to grinding off the raised boss member 98 was merely an example of one way this might be done. The main point of the applicant's arguments is that there is simply no suggestion whatsoever in Martin or elsewhere in the prior art for one of ordinary skill in the art to remove the raised boss member 98 of the clamping member 88 so that the clamping member 88 has a flat surface, whether by grinding or by any other method.

Returning to the rejection, it is furthermore submitted that the proposed modification of the embodiment in FIG. 7 of Martin proposed by the Examiner does not provide "a flat frame supporting the first flat surface of the flat mask so that the flat mask is tensed and the first flat surface remains flat" as recited in claim 14 because the mask supporting frame 34 has a raised ridge 38 as shown in FIGS. 1 and 7 of Martin and this is not "a flat frame" as recited in claim 14. The Examiner has not alleged that it would have been obvious to make Martin's mask supporting frame 34 flat by removing the raised ridge 38, and it is submitted that nothing whatsoever in Martin or elsewhere in the prior art suggests that this be done.

The above arguments were also presented on page 10 of the Request for Reconsideration After Final Rejection of May 23, 2007. In response to these arguments, the Examiner states as follows on pages 2 and 3 of the Advisory Action of June 1, 2007:

The Applicant argues on pg. 10 that the Examiner does not provide "a flat frame supporting the first flat surface of the flat mask so that the flask mask is tensed and the first flat surface remains flat" as recited in claim 14 because the mask supporting frame 34 has a raised edge 38 and this is not "a flat frame" as recited in claim 14. However, one of ordinary skill in the art would have recognized that the raised ridge is also used as part of the clamping mechanism and would have omitted such a feature with the knowledge of losing the clamping function (i.e., for the same reason as omitting the raised boss member) because the rejection

relies on the obviousness of replacing the clamping method with a welding method, as discussed above. The omission of the raised edge is obvious in view of the obviousness to remove the raised boss member as recited in the rejection.

Here, the Examiner has applied the same reasoning that he employed with respect to removing the boss member 98 and the clamping member counterbore 94 discussed above. That is, the Examiner reasons that since the raised ridge 38 shown in FIG. 7 of Martin is required only with the use of clamping, such as in the clamping embodiment shown in FIG. 7 of Martin, one of ordinary skill would have recognized that the raised ridge 38 is no longer required when clamping is no longer being used, such as when welding is used in place of clamping, such as in the welding embodiment shown in FIGS. 1-6 of Martin. However, the Examiner has apparently overlooked the fact that the clamping member 88 in FIG. 7 of Martin, which the Examiner considers to correspond to the "flat cover mask" recited in claim 14 when modified to eliminate the raised boss member 98, the clamping member counterbore 94, and the raised ridge 38 as proposed by the Examiner, is also required only with the use of clamping.

Thus, applying the Examiner's own reasoning with respect to the raised ridge 38 to the clamping member 88, it is submitted that one of ordinary skill would have recognized that the clamping member 88 is also no longer required when clamping is no longer being used, such as when welding is used in place of clamping, such as in the welding embodiment shown in FIGS. 1-6 of Martin. Accordingly, pursuant to the Examiner's own reasoning and MPEP 2144.04(II)(A) apparently relied on by the Examiner himself, it is submitted that it would not have been obvious to one of ordinary skill in the art to eliminate the raised ridge 38 in FIG. 7 of Martin as proposed by the Examiner.

As can be seen from preceding discussion, the Examiner has now proposed yet a further selective modification of the alternate embodiments in FIGS. 1-6 and FIG. 7 of Martin, in which the Examiner has proposed that the clamping member 88 from the clamping embodiment in FIG. 7 of Martin be combined with the welding embodiment in FIGS. 1-6 of Martin, but only after the clamping member 88 has been modified by eliminating the raised boss member 98, the clamping member counterbore 94, and the raised ridge 38 from the clamping member 88 to make the clamping member 88 flat. It is submitted that the Examiner has not identified anything whatsoever in Martin or elsewhere in the prior art that would have motivated one of ordinary skill in the art to make such a further selective modification of Martin. Furthermore, it is submitted

that such a further selective modification of Martin is contrary to MPEP 2144.04(II)(A) apparently relied on by the Examiner himself.

Returning to the rejection, it is furthermore submitted that the modification of the embodiment in FIG. 7 of Martin proposed by the Examiner would change the principle of operation of the embodiment in FIG. 7 of Martin, which is to stretch the metal foil 40' to establish a radial tension in the metal foil 40' by the clamping action of the clamping member 88 having the raised boss member 98 and the mask supporting frame 34 having the raised ridge 38 as shown in FIG. 7 of Martin. See column 10, lines 62-66; column 11, lines 5-13; and column 21, lines 23-30, of Martin. In contrast, in the modification of the embodiment in FIG. 7 of Martin proposed by the Examiner, it would be necessary to establish a radial tension in the metal foil 40' by using the edges of the metal foil 40' to stretch the metal foil 40' before the metal foil 40' is welded between the mask supporting frame 34 and the modified clamping member 88 without the raised boss member 98 and having the flat surface. See column 10, lines 23-30, and column 21, lines 13-23, of Martin. Accordingly, it is submitted the Examiner's proposed modification is improper. See MPEP 2143.01(VI) (MPEP page 2100-130).

The above arguments were also presented on page 10 of the Request for Reconsideration After Final Rejection of May 23, 2007. In response to these arguments, the Examiner states as follows on page 3 of the Advisory Action of June 1, 2007 (material in brackets [] added for clarification):

The Applicant argues on pg. 10 that the substitution of the clamping method for a welding method would change the principle [of] operation of the embodiment in Fig. 7. However, one of ordinary skill in the art would have expected similar results using either method because both methods are used to maintain a predetermined tension in the mask.

However, it is submitted that whether one of ordinary skill in the art would have expected similar results using two alternate methods is not a proper test for whether it would have been obvious to substitute one of the methods for the other, as the Examiner has proposed to do by substituting the welding method of the embodiment in FIGS. 1-6 of Martin for the clamping method of the embodiment in FIG. 7 of Martin. Nor has the Examiner cited any statute, rule, procedure, or decision in support of his position.

MPEP 2143.01(VI) (MPEP page 2100-130) cited above specifically provides as follows (material in brackets [] in original; emphasis by underlining added):

If the proposed modification or combination of the prior art would change the principle of operation of the prior art invention being modified, then the teachings of the references are not sufficient to render the claims *prima facie* obvious. *In re Ratti*, 270 F.2d 810, 123 USPQ 349 (CCPA 1959) (Claims were directed to an oil seal comprising a bore engaging portion with outwardly biased resilient spring fingers inserted in a resilient sealing member. The primary reference relied upon in a rejection based on a combination of references disclosed an oil seal wherein the bore engaging portion was reinforced by a cylindrical sheet metal casing. Patentee taught the device required rigidity for operation, whereas the claimed invention required resiliency. The court reversed the rejection holding the "suggested combination of references would require a substantial reconstruction and redesign of the elements shown in [the primary reference] as well as a change in the basic principle under which the [primary reference] construction was designed to operate." 270 F.2d at 813, 123 USPQ at 352.).

Here, just as in *Ratti* cited above, the modification of the embodiment in FIG. 7 of Martin proposed by the Examiner would require a substantial reconstruction and redesign of the elements shown in the embodiment in FIG. 7 of Martin as well as a change in the basic principle under which the embodiment in FIG. 7 of Martin was designed to operate, such that the teachings of Utsugi, Ito, and Martin are not sufficient to render claim 14 *prima facie* obvious.

Accordingly, for at least the foregoing reasons, it is submitted that Utsugi, Ito, and Martin do not disclose or suggest "a flat mask comprising a flat thin plate in which a predetermined pattern of apertures is formed, the flat mask having a first flat surface extending over an entire area of the flat mask, and a second flat surface extending over the entire area of the flat mask, the second flat surface being separated from the first flat surface by a thickness of the mask; a flat frame supporting the first flat surface of the flat mask so that the flat mask is tensed and the first flat surface remains flat; and a flat cover mask supporting the second flat surface of the flat mask so that the second flat surface remains flat" as recited in claim 14.

Claim 17

It is submitted that Utsugi, Ito, and Martin do not disclose or suggest the feature "wherein the flat mask, the flat frame, and the flat cover mask are held together by welds" recited in dependent claim 17.

In explaining the rejection of claim 17, the Examiner takes the position that this feature of claim 17 is provided by the modification of the embodiment in FIG. 7 of Martin proposed by the Examiner discussed above in connection with claim 14. However, it is submitted that it would not have been obvious to modify the embodiment in FIG. 7 of Martin as proposed by the Examiner for the reasons discussed above in connection with claim 14.

Furthermore, it is submitted that Martin specifically teaches away from welding together the metal foil 40', the dimensionally stabilized mask supporting frame 34, and the clamping member 88 in FIG. 7 of Martin as proposed by the Examiner in the following passage in column 21, lines 18-30, of Martin (emphasis added):

The above method [i.e., the embodiment shown in FIGS. 1-6 of Martin] can utilize the step of rigidly affixing the periphery of the metal foil mask 40' to the circumferentially extending surface by the step of welding the periphery of the metal foil mask 40' to the dimensionally stabilized mask supporting frame 34. In the alternative, a method can utilize the step of rigidly affixing the periphery of the metal foil mask 40' to the circumferentially extending surface by including the step of clamping the periphery of the metal foil mask 40' by a clamping member 88 against the dimensionally stabilized mask supporting frame 34, both illustrated in FIG. 7, to maintain a radial tension in the metal foil mask 40'.

Since Martin specifically teaches away from the modification of the embodiment in FIG. 7 of Martin proposed by the Examiner, it is submitted that the motivation for the modification proposed by the Examiner is improper. See MPEP 2145(X)(D) (MPEP pages 2100-160 and 2100-161).

The above arguments were also presented in the Amendment of February 1, 2007. In response to these arguments, the Examiner states as follows in the Final Office Action of February 27, 2007:

The Applicant argues on pgs. 8-10 that Martin specifically teaches away from welding the metal foil, supporting frame, and the clamping member in FIG. 7. The Applicant specifically points

out that Figs. 1-6 uses welding to affix the mask while Fig. 7 uses a step of clamping. However, the Applicant's argument is incorrect because the teaching of Martin does not rise to the level of teaching away. The alternative of clamping does not exclude welding. Martin does not teach or suggest that the combination of both affixing methods is inoperable.

The Examiner has apparently missed the point of the applicant's arguments. FIGS. 1-6 of Martin teach affixing the metal foil 40' to the mask supporting frame 34 using welding but without using the clamping member 88 which is used in FIG. 7 of Martin. FIG. 7 of Martin teaches affixing the metal foil 40' to the mask supporting frame 34 using the clamping member 88 but without using the welding which is used in FIGS. 1-6 of Martin. Thus, Martin discloses two alternatives—using welding or using the clamping member 88. Martin teaches that if welding is used, then the clamping member 88 is not used. Alternatively, Martin teaches that if the clamping member 88 is used, then welding is not used. It is in this sense that Martin specifically teaches away from using welding if the clamping member 88 is used. Thus, contrary to the Examiner's assertion that "[t]he alternative of clamping does not exclude welding," Martin specifically teaches that the alternative of clamping does in fact exclude welding. Since the modification of the embodiment in FIG. 7 of Martin proposed by the Examiner uses the clamping member 88, the Examiner's proposal to use welding in this modified embodiment is directly contrary to the specific teachings of Martin.

Furthermore, assuming *arguendo* that "Martin does not teach or suggest that the combination of both affixing methods is inoperable" as alleged by the Examiner, it is submitted that this does not provide the motivation required to support the rejection of claim 17 under 35 USC 103(a). Rather, the Examiner is required to identify something in Martin or elsewhere in the prior art that would have suggested to one of ordinary skill in the art the desirability of using both welding and the clamping member 88 to affix the metal foil 40' to the mask supporting frame 34. It is submitted that the Examiner has not done this, such that the Examiner has not established a *prima facie* case of obviousness under 35 USC 103(a) with respect to claim 17.

The above arguments were also presented on pages 11 and 12 of the Request for Reconsideration After Final Rejection of May 23, 2007. In response to these arguments, the Examiner states as follows on page 3 of the Advisory Action of June 1, 2007:

The Applicant argues on pg. 12 that Figs. 1-6 teach affixing the metal foil to the mask supporting frame using welding *but*

without using the clamping member which is used in Fig. 7 and that Fig. 7 teachings affixing the metal foil to the mask supporting frame using the clamping member *but without using the welding* which is used in Figs. 1-6. However, Martin never teaches such exclusions. Martin merely teaches that the clamping method and welding method are alternatives, but never teaches away from using such methods in the same embodiment. Nevertheless, the rejection is only based on the use of welding. As stated above, the welding method is used to replace the clamping method.

However, although the Examiner states that "the rejection is only based on the use of welding," and that "the welding method is used to replace the clamping method," it is submitted that the rejection is in fact based on a combination of the welding method of the welding embodiment in FIGS. 1-6 of Martin and the clamping method of the clamping embodiment in FIG. 7 of Martin because the Examiner has proposed that the clamping member 88 of the clamping embodiment in FIG. 7 be welded to the metal foil mask 40' and the mask supporting frame 32, whereas in the welding embodiment in FIGS. 1-6, only the metal foil mask 40' is welded to the mask supporting frame 32.

Furthermore, assuming *arguendo* that "Martin . . . never teaches away from using such methods [the clamping method and the welding method] in the same embodiment" as alleged by the Examiner, it is submitted that Martin also never teaches towards using both methods in the same embodiment. In the absence of such a teaching, it is submitted that the Examiner is required to identify some suggestion or motivation in Martin or elsewhere in the prior art for one of ordinary skill in the art to combine the welding method of the welding embodiment in FIGS. 1-6 of Martin with the clamping member 88 of the clamping embodiment in FIG. 7 of Martin in order to establish a *prima facie* case of obviousness pursuant to MPEP 2143 cited above. However, the Examiner has not identified such a suggestion or motivation.

Accordingly, for at least the foregoing reasons, it is submitted that Utsugi, Ito, and Martin do not disclose or suggest the feature "wherein the flat mask, the flat frame, and the flat cover mask are held together by welds" recited in claim 17.

Claim 21

It is submitted that Utsugi, Ito, and Martin do not disclose or suggest the feature "wherein the flat mask is tensed with different tensions at different points on each of a plurality of sides of the flat mask" recited in dependent claim 21.

In explaining the rejection of claim 21, the Examiner states as follows:

Claim 21: Martin teaches that the mask has substantially uniform tension (abstract). In other words, the tension of the mask may not be completely uniform. Thus, the tension of the mask may vary at different points.

The relevant part of the abstract of Martin referred to by the Examiner reads as follows (emphasis added):

a securing device for rigidly affixing the periphery of the mask to the circumferentially extending surface with a substantially uniform tension applied to and in the plane of the mask and wherein the tension has a magnitude which establishes a stress on the mask during use which is less than the predetermined yield strength of the mask over a temperature range of a deposition process including operating temperatures of a deposition environment and being adapted to maintain a tension thereon of sufficient magnitude to keep the mask under tension independent of variations in tension due to the thermal expansion characteristics of the mask to dimensionally stabilize the thin film pattern at the operating temperatures of a deposition environment is shown.

It is submitted that Martin's mere disclosure of a "substantially uniform tension" would not have suggested to one of ordinary skill in the art the desirability of providing the feature "wherein the flat mask is tensed with different tensions at different points on each of a plurality of sides of the flat mask" recited in claim 21 in the modification of the embodiment in FIG. 7 of Martin proposed by the Examiner. Nor has the Examiner identified anything whatsoever in Martin or elsewhere in the prior art that would have suggested the desirability of doing this. Accordingly, it is submitted that the Examiner has not established a *prima facie* case of obviousness under 35 USC 103(a) with respect to claim 21.

The above arguments were also presented on page 13 of the Request for Reconsideration After Final Rejection of May 23, 2007. In response to these arguments, the Examiner states as follows on page 3 of the Advisory Action of June 1, 2007:

The Applicant argues on pg. 13 that Martin's mere disclosure of a "substantially uniform tension" would not have suggested to one of ordinary skill in the art the desirability of providing the feature "wherein the flat mask is tensed with different tensions at different points on each of a plurality of sides of the flat mask" recited in dependent claim 21. However, the teaching of "substantially uniform tension" would have suggested to one of ordinary skill in the art that the tension of the mask does not have to be completely and equally uniform. One of ordinary skill in the art would have been led to apply a tension as uniform as possible without the extra effort to make the tension perfectly uniform. Thus, the mask would have slightly different tensions applied on different sides, thereby meets the limitations of the claim.

It appear that the Examiner has essentially taken the position that the feature "wherein the flat mask is tensed with different tensions at different points on each of a plurality of sides of the flat mask" recited in claim 21 is inherently provided by Martin's teaching of "substantially uniform tension."

Pursuant to MPEP 2112(IV), the fact that a certain result or characteristic may occur or be present in the prior art is not sufficient to establish the inherency of that result or characteristic. *In re Rijckaert*, 9 F.3d 1531, 1534, 28 USPQ2d 1955, 1957 (Fed. Cir. 1993); *In re Oelrich*, 666 F.2d 578, 581-82, 212 USPQ 323, 326 (CCPA 1981). "To establish inherency, the extrinsic evidence 'must make clear that the missing descriptive matter is necessarily present in the thing described in the reference, and that it would be so recognized by persons of ordinary skill. Inherency, however, may not be established by probabilities or possibilities. The mere fact that a certain thing may result from a given set of circumstances is not sufficient.' " *In re Robertson*, 169 F.3d 743, 745, 49 USPQ2d 1949, 1950-51 (Fed. Cir. 1999) (citations omitted). "In relying upon the theory of inherency, the examiner must provide a basis in fact and/or technical reasoning to reasonably support the determination that the allegedly inherent characteristic necessarily flows from the teachings of the applied prior art." *Ex parte Levy*, 17 USPQ2d 1461, 1464 (Bd. Pat. App. & Inter. 1990) (emphasis in original).

Here, assuming *arguendo* that Martin's "teaching of 'substantially uniform tension' would have suggested to one of ordinary skill in the art that the tension of the mask does not have to be completely and equally uniform" as alleged by the Examiner, and that "one of ordinary skill in the art would have been led to apply a tension as uniform as possible without the extra effort to make the tension perfectly uniform" as alleged by the Examiner, it is submitted that the Examiner

has not provided a basis in fact and/or technical reasoning to reasonably support a determination that this would necessarily cause "the mask [to] have slightly different tensions applied on different sides" as alleged by the Examiner, or that this would necessarily provide the feature "wherein the flat mask is tensed with different tensions at different points on each of a plurality of sides of the flat mask" recited in claim 21. It is submitted that Martin's teaching of "substantially uniform tension" is entirely too generalized to suggest this feature of claim 21 that recites a very specific combination of (1) "different tensions" (2) "at different points" (3) "on each of a plurality of sides of the flat mask."

Accordingly, for at least the foregoing reasons, it is submitted that Utsugi, Ito, and Martin do not disclose or suggest the feature "wherein the flat mask is tensed with different tensions at different points on each of a plurality of sides of the flat mask" recited in claim 21.

Conclusion—Rejection 2

For at least the foregoing reasons, it is respectfully requested that the rejection of claims 14-17 and 21 (i.e., claims 14, 17, and 21 discussed above and claims 15 and 16 depending from claim 14) under 35 USC 103(a) as being unpatentable over Utsugi in view of Ito and Martin be reversed.

Rejection 3

Claim 15 was rejected under 35 USC 103(a) as being unpatentable over Utsugi in view of Ito and Martin as applied to claim 14, and further in view of Yamada et al. (Yamada) (U.S. Patent Application Publication No. 2001/0019807). This rejection is respectfully traversed.

However, it is submitted that claim 15 is in fact patentable over Utsugi, Ito, Martin, and Yamada for at least the following reasons.

Notwithstanding the position taken by the Examiner, it is noted that claim 15 depends from claim 14, and it is submitted that claim 15 is patentable over Utsugi, Ito, Martin, and Yamada for at least the same reasons discussed above that claim 14 is patentable over Utsugi, Ito, and Martin.

For at least the foregoing reasons, it is respectively requested that that the rejection of claim 15 under 35 USC 103(a) as being unpatentable over Utsugi in view of Ito and Martin as applied to claim 14, and further in view of Yamada be reversed.

Rejection 4

Claims 18 and 19 were rejected under 35 USC 103(a) as being unpatentable over Utsugi in view of Ito and Martin as applied to claim 17, and further in view of Kitazume (U.S. Patent Application Publication No. 2002/0025406).

However, it is submitted that claims 18 and 19 are in fact patentable over Utsugi, Ito, Martin, and Kitazume for at least the following reasons.

It is submitted that Utsugi, Ito, Martin, and Kitazume do not disclose or suggest the feature "wherein the welds are dot welds" now recited in dependent claim 18 or the feature "wherein a welding pitch between the dot welds is 3 mm or less" now recited in claim 19 at least because it would not have been obvious to use welding in the modification of the embodiment in FIG. 7 of Martin proposed by the Examiner for the reasons discussed above in connection with claims 14 and 17.

For at least the foregoing reasons, it is respectfully requested that the rejection of claims 18 and 19 under 35 USC 103(a) as being as being unpatentable over Utsugi in view of Ito and Martin as applied to claim 17, and further in view of Kitazume be reversed.

Rejection 5

Claim 22 was rejected under 35 USC 103(a) as being unpatentable over Utsugi in view of Ito and Martin as applied to claim 14, and further in view of Fujimori et al. (Fujimori) (U.S. Patent Application Publication No. 2002/0102754).

However, it is submitted that claim 22 is in fact patentable over Utsugi, Ito, Martin, and Fujimori for at least the following reasons.

It is submitted that Utsugi, Ito, Martin, and Fujimori do not disclose or suggest the feature "wherein the flat frame and the flat cover mask are the only elements that touch the flat mask" recited in dependent claim 22.

In explaining the rejection of claim 22, the Examiner takes the position that the purpose of the registration pins 62 of the prealigned registration members 60 (which also include the adjusting means 64) shown in FIGS. 1 and 23 of Martin is to align with the registration members 162, 164, and 166 shown in FIGS. 11, 12, 22, and 23 of Martin so as to provide a proper alignment of the mask 40 with the substrate 150 as shown in FIG. 23 of Martin. The Examiner is of the opinion that "such adjusting means may come in contact with the mask when extended through the apertures (Fig. 7 [of Martin])." However, the Examiner is of the opinion that it would have been obvious to eliminate Martin's prealigned registration member 60 which include the registration pins 62 and the adjusting means 64 and align Martin's mask 40 with Martin's substrate 150 using the method described in paragraph [0066] of Fujimori. Specifically, the Examiner states as follows (emphasis added):

However, Fujimori teaches that alignment marks on the mask and substrate with the use of a camera can be used for to make the proper alignment [0066]. Alignment marks 6 [in FIGS. 1-4] are simple indications on the surface of the frame of the mask and would not require any contact with the mask. Substitution of equivalents requires no express motivation (MPEP 2144.06). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to used alignment marks as opposed to the registration pins and registration members of Martin to align the mask to the substrate with a reasonable expectation of success because Fujimori teaches that alignment marks is an operable equivalent for aligning the mask to the substrate.

The Examiner is apparently relying on the following passage in MPEP 2144.06 (see MPEP page 2100-143) (emphasis by underlining added):

An express suggestion to substitute one equivalent component or process for another is not necessary to render such substitution obvious. *In re Fout*, 675 F.2d 297, 213 USPQ 532 (CCPA 1982).

Thus, this passage of the MPEP states that an express suggestion to substitute one equivalent for another is not required to render such substitution obvious, rather than an express motivation as alleged by the Examiner.

Furthermore, in the decision of *In re Fout* referred to in this passage of the MPEP, the Court states as follows in pertinent part (see 213 USPQ 532 at 536):

Express suggestion to substitute one equivalent for another need not be present to render such substitution obvious. In re Siebentritt, 54 CCPA 1083, 372 F.2d 566, 152 USPQ 618 (1967).

In the decision of *In re Siebentritt* referred to in this passage of *In re Fout*, the Court states as follows in pertinent part (see 152 USPQ 619):

We see no need for explicit reference to a bonding process. The issue of obviousness is not determined by what the references expressly state but by what they would reasonably suggest to one of ordinary skill in the art.

Accordingly, it is submitted that the point of *In re Fout* and *In re Siebentritt* is that while an express suggestion to substitute one equivalent for another is not required to render such substitution obvious, there still must be something in the applied reference or references that would have suggested the desirability of the substitution to one of ordinary skill in the art. Here, it is submitted that the Examiner has not identified anything whatsoever in Martin and Fujimori or elsewhere in the prior art that would have suggested the desirability of the substitution proposed by the Examiner to one of ordinary skill in the art.

Furthermore, the Examiner's attention is directed to the following passage in MPEP 2144.06 (see MPEP page 2100-142):

In order to rely on equivalence as a rationale supporting an obviousness rejection, the equivalency must be recognized in the prior art, and cannot be based on applicant's disclosure or the mere fact that the components at issue are functional or mechanical equivalents. *In re Ruff*, 256 F.2d 590, 118 USPQ 340 (CCPA 1958) (The mere fact that components are claimed as members of a Markush group cannot be relied upon to establish the equivalency of these components. However, an applicant's expressed recognition of an art-recognized or obvious equivalent may be used to refute an argument that such equivalency does not exist.)

Here, it is submitted that the Examiner has not identified anything whatsoever in Martin and Fujimori or elsewhere in the prior art that recognizes that Martin's alignment method and Fujimori's alignment method are equivalents. Rather, the rejection appears to be based solely on the Examiner's opinion that these two alignment methods are functional or mechanical equivalents.

The above arguments were also presented on pages 15-17 of the Request for Reconsideration After Final Rejection of May 23, 2007 (except that the citation of *In re Ruff* in MPEP 2144.06 was omitted on page 17). In response to these arguments, the Examiner states as follows on page 4 of the Advisory Action of June 1, 2007:

The Applicant argues on pg. 16 that MPEP 2144.06 states that an express suggestion to substitute for another is not required to render such substitution obvious, rather than an express motivation as alleged by the Examiner. However, an express suggestion is comprehensive of an express motivation, since the motivation would require such suggestion. Thus, a motivation would require more evidence for support than a suggestion.

The Applicant argues on pg. 16 that while an express suggestion to substitute one equivalent for another is not required to render such substitution obvious, there still must be something in the applied reference or references that would have suggested the desirability of the substitution to one of ordinary skill in the art. However, both the registration members of Martin and the alignment marks of Fujimori are used for the same purpose of aligning the mask to a substrate. Thus, the alignment methods are equivalents. The knowledge that such are equivalents is enough to render a substitution of alignment methods obvious.

The Applicant argues on pg. 17 that the Examiner has not identified anything whatsoever in Martin and Fujimori or elsewhere in the prior art that recognizes that Martin's alignment method and Fujimori's alignment method are equivalents. However, Martin and Fujimori teach that both methods are used for the same purpose of aligning a mask to a substrate. One of ordinary skill in the art would have recognized that such methods are equivalents by merely looking at the two references.

However, the Examiner's statement that "[o]ne of ordinary skill in the art would have recognized that such methods [Martin's alignment method and Fujimori's alignment method] are equivalents by merely looking at the two references" does not establish that the alleged equivalency between Martin's alignment method and Fujimori's alignment method is recognized in the prior art as required by MPEP 2144.06 cited above. Rather, this statement appears to be based solely on the Examiner's mere opinion that Martin's alignment method and Fujimori's alignment method are functional or mechanical equivalents, which, pursuant to MPEP 2144.06 cited above, is not sufficient for the Examiner to rely on equivalence as a rationale supporting the obviousness rejection of claim 22.

Accordingly, for at least the foregoing reasons, it is submitted that Utsugi, Ito, Martin, and Fujimori do not disclose or suggest the feature "wherein the flat frame and the flat cover mask are the only elements that touch the flat mask" recited in claim 22.

For at least the foregoing reasons, it is respectively requested that that the rejection of claim 22 under 35 USC 103(a) as being unpatentable over Utsugi in view of Ito and Martin as applied to claim 14, and further in view of Fujimori be reversed.

Conclusion—Argument

In view of the law and the facts stated herein, it is submitted that claim 22 does in fact comply with the written description requirement of 35 USC 112, first paragraph, and that the various combinations of Utsugi, Ito, Martin, Yamada, Kitazume, and Fujimori relied on by the Examiner do not disclose or suggest all of the features recited in claims 14-19, 21, and 22.

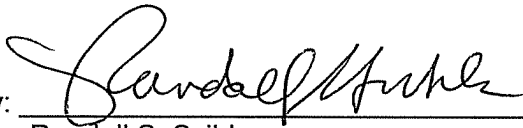
Accordingly, it is respectfully requested that that the rejection of claim 22 under 35 USC 112, first paragraph, as failing to comply with the written description requirement and the rejections of claims 14-19, 21, and 22 under 35 USC 103(a) as being unpatentable over the various combinations of Utsugi, Ito, Martin, Yamada, Kitazume, and Fujimori relied on by the Examiner be reversed.

If there are any additional fees associated with the filing of this paper, please charge the same to our Deposit Account No. 503333.

Respectfully submitted,

STEIN, MCEWEN & BUI, LLP

Date: 08/27/07

By: 
Randall S. Svihla
Registration No. 56,273

1400 Eye Street, NW
Suite 300
Washington, DC 20005
Telephone: (202) 216-9505
Facsimile: (202) 216-9510

VIII. CLAIMS APPENDIX

Title 37 CFR 41.37(c)(viii) and MPEP 1205.02 require this claims appendix to contain a copy of the claims involved in the appeal. However, neither 37 CFR 41.37(c)(viii) nor MPEP 1205.02 defines the term "claims involved in the appeal." Accordingly, this claims appendix contains all of the claims that are pending in this application, including claims 14-19, 21, and 22 that are on appeal, as well as an indication of which claims have been canceled.

1. (Withdrawn) A deposition mask frame assembly comprising:
a mask comprising a thin plate in which a predetermined pattern of apertures is formed;
a frame supporting one surface of the mask so that the mask is tensed; and
a cover mask supporting an opposite surface of the mask, wherein the cover mask corresponds to the frame.
2. (Withdrawn) The deposition mask frame assembly of claim 1, wherein the mask is formed of nickel or an alloy of nickel and cobalt.
3. (Withdrawn) The deposition mask frame assembly of claim 2, wherein the mask is formed by electro-forming.
4. (Withdrawn) The deposition mask frame assembly of claim 1, wherein the mask, the frame, and the cover mask are joined together by welding.
5. (Withdrawn) The deposition mask frame assembly of claim 4, wherein the welding is a dot welding.

6. (Canceled)

7. (Withdrawn) The deposition mask frame assembly of claim 1, wherein the cover mask is configured so as to support the four edges of the mask.

8. (Withdrawn) A method of manufacturing a deposition mask frame assembly, the method comprising:

electrodepositing a metal on an electrodepositing plate using an electro-forming method, wherein the metal is electrodeposited to a predetermined thickness, and the electrodepositing plate has a film attached corresponding to shielding portions that form an outer portion of a mask and define apertures in the mask;

separating the mask from the electrodepositing plate; and

installing a frame on one surface of the mask and installing a cover mask on the other surface of the mask while the mask is being tensed, and welding the cover mask, the mask, and the frame.

9. (Withdrawn) The method of claim 8, wherein the predetermined thickness is 30-50 μ m.

10. (Withdrawn) The method of claim 8, wherein the mask comprises nickel or an alloy of nickel and cobalt.

11. (Withdrawn) The method of claim 8, wherein the inner circumference of the cover mask is larger than an outer circumference of a substrate on which a layer is deposited.

12. (Withdrawn) The method of claim 8, wherein different tensions are applied to different sides of the mask to reduce a deviation of a total pitch of apertures and a line deviation.

13. (Withdrawn) The method of claim 8, wherein a portion of the cover mask and an edge of the mask are cut off to match a size and shape of the mask and the cover mask with the frame.

14. (Previously presented) A method of manufacturing an organic EL device, the method comprising:

forming a first electrode layer in a predetermined pattern on an insulating substrate;

forming an organic film comprising at least a patterned emission layer on the first electrode layer;

forming a second electrode layer in a predetermined pattern on the organic film; and

sealing the second electrode layer,

wherein the organic film and/or the second electrode layer are/is deposited using a deposition mask frame assembly, the deposition mask frame assembly comprising:

a flat mask comprising a flat thin plate in which a predetermined pattern of apertures is formed, the flat mask having a first flat surface extending over an entire area of the flat mask, and a second flat surface extending over the entire area of the flat mask, the second flat surface being separated from the first flat surface by a thickness of the mask;

a flat frame supporting the first flat surface of the flat mask so that the flat mask is tensed and the first flat surface remains flat; and

a flat cover mask supporting the second flat surface of the flat mask so that the second flat surface remains flat.

15. (Previously presented) The method of claim 14, wherein the flat mask is formed of nickel or an alloy of nickel and cobalt.

16. (Previously presented) The method of claim 14, wherein the flat mask is a flat electro-formed mask.

17. (Previously presented) The method of claim 14, wherein the flat mask, the flat frame, and the flat cover mask are held together by welds.

18. (Previously presented) The method of claim 17, wherein the welds are dot welds.

19. (Previously presented) The method of claim 18, wherein a welding pitch between the dot welds is 3 mm or less.

20. (Canceled)

21. (Previously presented) The method of claim 14, wherein the flat mask is tensed with different tensions at different points on each of a plurality of sides of the flat mask.

22. (Previously presented) The method of claim 14, wherein the flat frame and the flat cover mask are the only elements that touch the flat mask.

IX. EVIDENCE APPENDIX

1. Utsugi et al. (U.S. Patent Application Publication No. 2002/0150674) cited by the Examiner in the Final Office Action of June 6, 2006.
2. Ito et al. (U.S. Patent No. 5,652,067) cited by the Examiner in the Office Action of January 11, 2006, and the Final Office Action of June 6, 2006.
3. Martin (U.S. Patent No. 4,676,193) cited by the Examiner in the Final Office Action of June 6, 2006.
4. Yamada et al. (U.S. Patent Application Publication No. 2001/0019807) cited by the Examiner in the Office Action of January 11, 2006.
5. Kitazume (U.S. Patent Application Publication No. 2002/0025406) cited by the Examiner in the Office Action of January 11, 2006, and the Final Office Action of June 6, 2006.
6. Fujimori et al. (U.S. Patent Application Publication No. 2002/0102754) cited by the Examiner in the Final Office Action of February 27, 2007.

X. RELATED PROCEEDINGS APPENDIX

None.